

# HIFI CRITIC

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## HIGH END 2016

Jason Kennedy spent three days at Europe's biggest hi-fi show, but we only gave him two pages for his report

## A PURR OF PRE-AMPS

Julian Musgrave compares a number of pre-amps and passive system controllers

## dCS ROSSINI PLAYER + CLOCK

Chris Binns assesses dCS's Rossini CD player/DAC and its associated Master Clock

## WHY DO WAV AND FLAC FILES SOUND DIFFERENT?

Dr. Charles Zeilig and Jay Clawson measure the sound quality loss when interconverting FLAC and WAV files

## WILSON AUDIO SABRINA

Martin Colloms tries out an accomplished floorstanding, three-way moving-coil loudspeaker with ample power handling

## ROGUE AUDIO SPHINX V2

Paul Messenger auditions an affordable hybrid integrated amplifier that combines valves with digital amp modules

## MUSIC & MORE

## REVIEWED THIS ISSUE

MFA Baby Classic  
Cambridge Audio Ato SE1N  
Benchmark AH52  
Tivoli TD124  
Yoshii Teora No2  
First Walk M2  
Haim NAP-500 DR  
Townshend Allegri  
Bespoke Audio  
Gamut D3i  
XTZ Tune 4  
NVA The Second Statement  
Exposure 3010 S2  
Rogue Audio Sphinx V2  
Glasshouse Passive #1  
Vincent SV-700  
Haflor Ultimate Passive  
Little British Monitor  
Roksan Caspian RPP  
dCS Rossini Player+Clock  
Glasshouse TVC  
MFA Classic 632 Phono Amp  
Rothwell Headspace  
Rothwell Simplex  
Lounge Audio Copla  
Lounge Audio LCR MkII  
MFA 632  
MFA Classic Step Up





# Wilson Audio Sabrina

MARTIN COLLOMS TRIES OUT THE WILSON AUDIO SABRINA, A WELL PRICED FLOOR STANDING, THREE-WAY MOVING COIL LOUDSPEAKER WITH AMPLE POWER HANDLING

Some 20 years ago I bought a pair of Wilson Audio *WITTs*, to replace an earlier pair of *Watt-Puppy* combos. The least expensive Wilson Audio model at the time, the *WITT* was a large three-way floorstander with a good size 12in Focal bass unit and fine dynamic performance. I much liked its lively punchy sound, and reviewed it for *Stereophile* at that time. I was also very taken by the one-piece art deco styling, in my case set off with silver piano enamel finish.

Back then the *WITT* cost £12,000, so the *Sabrina* – its rough equivalent today – would seem very competitively priced at £16,000. It's about a third smaller than the old *WITT*, is designed for a free space in-room location, fits neatly into room settings, and has a choice of finishes: standard colours are Desert Silver, Galaxy Gray and Obsidian; Biarritz White and Titan Red, and specific colours matched on supply of a sample are available at extra charge. Our review samples

were finished to the highest standards in Obsidian WilsonGloss (that's black in English – *Ed*).

I first heard *Sabrina* at a hi-fi show during autumn 2015. A pair was playing impressively to large audiences in a particularly difficult, bass absorbing 50ft room, requiring close-to-wall positioning and very high power drive in order to get sufficient penetration. Yet the compact – even one could call diminutive – *Sabrina* showed hardly any signs of distress, readily illustrating the exceptional power handling and dynamic range that are characteristic of many Wilson Audio designs. Here was proof that this speaker will happily drive large rooms when required, despite being the smallest floorstander in the series. (Just ensure that a large power amplifier is available for such a situation; the larger the better, to make sure that it is not driven into potentially destructive clipping.)

*Sabrina* is classic Wilson Audio in appearance, the physical geometry and driver formation looking very

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like a smaller and slimmer version of *Sophia*, examples of which I have owned for some years (including the current *Series 3*). However, all is in fact new in this trim looking design. *Sabrina* benefits from drive units of rather later vintage than *Sophia*; indeed the drivers used here have rather more in common with the more recent and award-winning £40,000/pair *Alexia*. And although the alloy frame 200mm (8in) bass unit is modest in size, it has a big heart, performing like many a 10-incher in this system.

Introduced in late 2014, *Sabrina* has already proved very popular, as its relatively small footprint and one-piece construction makes it both easy to place and align, while the relatively competitive pricing is no disadvantage. It is sobering to recall that *Sophia* was first launched 15 years ago and I suspect that in practice *Sabrina* may well have rendered the *Sophia 3* obsolete. Three factors can be held responsible for this perhaps awkward situation: further developments in drive unit technology; additional advances in system design; and the latest degree of precision concerning low frequency alignments.

Expectations of performance are frequently related to a given bass driver size, and in practice a larger divergence of quality and output power is often noted than might be anticipated between different executions. While the custom designed Wilson bass unit fitted to *Sabrina* certainly has exceptional power handling (relating to maximum cone displacement and dynamics), it attains a rather greater than anticipated peak capacity when installed in this generous enclosure volume. Here it operates in a critically tuned, near classical bass reflex alignment, the 8in (203mm) frame *Sabrina* bass unit is significantly smaller than the alloy-cone 10in *Sophia* driver, and its paper cone diaphragm can operate well into the midrange, easing the task of blending to the next driver in the line up. That driver is a 5.75in (145mm) frame, 'sliced, flared cone' midrange, derived from the well known Scan-Speak design, and further developed by Wilson Audio. It is distinguished by a frequency bandwidth which extends well into the high frequency range, again in turn easing the task of combining its output with Wilson Audio's proprietary 1in (25mm) silk dome tweeter, as used in Wilson's prestige *CVT* series.

The sound output from the three drivers is optimally combined, thanks partly to the favourable acoustics of the slant-back, prism-shaped enclosure, which helps align the driver outputs in the time domain. The semi-pyramidal shape also assists in maintaining a more uniform acoustic output over the frequency range, where the off-axis sound output and therefore the consequent room reflections relate more closely to the axial

sound output. As with larger WA designs, a key component unifying the launch plane of the drivers, the *Sabrina* front baffle is machined entirely from the top grade of Wilson Audio's *X-Material*.

*Sabrina* stands just 1m tall on its steel spiked feet, is 30cm wide by 39cm deep, but the tapered semi-pyramidal format looks rather less bulky than these figures might suggest – it's just 18cm wide at the truncated upper apex. Each speaker weighs 94lbs (42.64kg) (a two-man lift), while the shipping weight for the pair is quoted at 101kg. Wilson rates *Sabrina* as a 4ohm amplifier load, along with an unnecessarily precise specified minimum of '2.53ohms'. This is patently somewhat below the  $\pm 20\%$  standard criterion for a '4ohm' rating, which would be 3.2 ohms.

The manufacturer's frequency response is specified as an RAR (room averaged response), and the result will nevertheless depend on both the room and how the averaged measurement is taken. The response range quoted is 31Hz – 21 kHz  $\pm 3$  dB, a notably wide span. (It will be interesting to compare this with my own in-room results.) Sensitivity is rated at 87dB/W (presumably for a standard 2.83V/8ohm watt input) which is about average for the size and claimed bass extension. My estimated amplifier power ratings is 40 to 100W for smaller rooms, and up to 200W/ch, used sensibly, for larger rooms.

Recommended placement is free space, somewhat away from walls, using the supplied floor coupling spikes, and where necessary the protection footers provided for hard floors. It proved to be very well behaved during the set-up and seemed happy to operate in locations that were very similar to those used with the *Sophia 3* and the *Magico S5*. As is customary for Wilson, speaker cable connection is single wired using heavy duty binding posts. Although these don't accommodate UK-style 4mm plugs, they are wire and spade compatible (and a decent wrench is supplied to make firm connections). Again in the Wilson Audio tradition, *Sabrina* includes some fine tune options which the experienced installer might find useful to deal with room and system matching issues. These comprise individual adjustment of the attenuator resistors for the mid and high frequency ranges, and also electromagnetic damping control for the low frequency driver: 30.5ohms is the UK's standard parallel resistor value, but this may need to be reduced by 5-10% for smaller rooms, while larger rooms might benefit from an increase to 33 or 39 ohms, to enable something nearer to a more generous free field bass output. (This adjustment should not be undertaken unless really necessary, as the speakers will need to be flipped over, and a well

“Sabrina almost defies the nature of its physical box construction by magically reaching out to the listener, conjuring up large scale stereo images that are deep, wide, stable and very well focused”



screwed-in crossover patch-bay accessed to fit a wire-wound power resistor of the correct type.)

*Sabrina* comes with tidy and unobtrusive friction-fitted grilles, coloured to match the chosen finish. Beneath the grille, the driver panel comprises a mixture of black felt and matt black, and since the drivers are all black too, the appearance here is not too distracting. I listened with and without the grilles and preferred them removed for the slightly greater clarity, dynamics and focus, ideally with a small reduction in toe-in to optimise the timbre.

### Sound Quality

Well run in, but first brought in from a cool storage area, the *Sabrin*as took a day or two to reach a 21C equilibrium in my room, sounding clearer and more upbeat as time elapsed. That said, first impressions were of substantially entertaining potential since a noticeably well dimensioned and focused stereo image immediately emerged from the space between the enclosures. Although it did sound a tad bright, it was very lively and detailed with good depth and transparency; altogether a most promising beginning. If *Sophia 3* is the sedan in this series, *Sabrina* is the roadster. (I should also note that the accompanying Constellation *Inspiration 1.0* pre-amp was brand new, with just one hour of warm-up on the clock, and that the matching Constellation *Inspiration* stereo power amp had also been powered down for a few weeks.) A few days later, this system was really singing.

Despite a price divide of nearly three to one, I instinctively felt that the intrinsic character of the *Sabrina* borrows more from the svelte and highly capable but much more costly *Alexia* than the *Sophia 3*. *Sabrina*'s mid-to-treble transition is notably well blended, open sounding, very detailed, but not in any way forced. It's as if the smaller and highly refined midrange unit had provided the designer more freedom to finesse the critical acoustic changeover between the drivers.

A noted Wilson feature is a large three inch diameter milled-from-alloy reflex loading duct. Located on the rear panel it tunes the bass driver in conjunction with the enclosure. There seems to be more than enough volume for the bass driver to breathe freely, and efficiently pound away at the port to deliver an unexpectedly deep and nicely percussive bass register, with very good tune playing.

When driven to the limit it just ducks a little on the lowest bass notes, up-shifting the typically deep 33Hz in-room extension to more like 40 Hz. But bass lines are notably dynamic and tuneful. *Sabrina*'s punchy and expressive low frequencies endow it with a notably upbeat 'go for it' quality. Coloration is held to very moderate levels, though grand piano is projected just a little forward in the mix. Strongly rock bass lines were well presented, if not quite to the focused timing precision of big sealed-box examples. (Here a personal audition using a favourite track is always a good idea to assess how well a loudspeaker copes with preferred material.)

Not only are stereo images presented on a large scale, with impressively consistent focus over the whole frequency range, *Sabrina* also offers an almost uncanny sense of perspective. It showed an elegant and satisfying layering of depth information that verged on sonic holography, and the bright and clear illumination of a virtual 3D sound stage readily captured the imagination. Taken overall, it sounded free, expressive and exuberant with bags of information to complement that notably generous and well focused stereo image. As things settled down, making use of various options for amplification and cables, and undertaking some further modest experiments with location and listening positions, it remained fundamentally evenhanded and well balanced, not requiring those special accommodations which sometimes have to be made to try and optimise the installation of a more awkward sounding loudspeaker.

One key to its listenability is the ability to convey fine detail in complex passages, to dig deep into the mix and not show congestion, and also to sound natural at quite low volume levels. However, it will happily hammer away on

massive programme peaks without audible stress or hardening, showing virtually Hollywood levels of dynamic expression and almost overwhelming acoustic power.

The essentially neutral sound meant that it was nicely evenhanded, both with different musical styles and in matching the various component and accessory choices. I tried a number of combinations with fine results, including the Constellation amplifiers and also the Naim *NAP 500DR* power amplifier towards the end of the sessions. It was not critical of speaker cable either, and I enjoyed sampling Transparent *XL MM2*, Naim *NAC A5* and Yter, each showing their own particular balance of virtues. All these factors point towards an innate neutrality: a well balanced quality that firmly supports the unequivocally positive reactions from my listeners.

### Conclusions

Recommending the *Sabrina* is a breeze, so easy was it to install and so well did it sound. Indeed, for all the world it behaved like a compact version of the very highly rated *Alexia*. *Sabrina* almost defies the nature of its physical box construction by magically reaching out to the listener, conjuring up large scale stereo images that are deep, wide, stable and very well focused. The bass is fluid, tuneful and exuberant, with more power and extension than one has any right to expect; the midrange has natural detail and dynamic expression; and the treble quality somehow exceeds the performance of the earlier inverted alloy domes used by Wilson Audio. *Sabrina* takes high powers very well and while a hefty amplifier is needed to achieve its full potential, it can then approach the performance of many larger and more costly loudspeakers. *Sabrina* has breezed through the *HIFICRITIC* test programme, and well deserves its Audio Excellence award.

### Lab Results

Even though it's not quite as taxing as that of Wilson Audio's *Sasha 2*, the impedance here does present a fairly difficult load. Our tested resistive minimum was 2.5ohm for nominal 4ohm rating, though the equivalent operational minimum is rather less than this (about 1.5ohm) when considering the particular impedance and phase angle combination at 72Hz, which is in a region of substantial program power. This loading does alter the sound of higher output impedance tube amplifiers, a factor that should be assessed by an intending purchaser.

The high capacity port is tuned to 33Hz, a quite low frequency that will help reduce the group delay in the main bass range. The phase angles of the load are quite good above this main bass region, holding

to a pretty kind  $\pm 20^\circ$  120Hz - 12kHz, and therefore easing the amplifier load.

On-axis pair matching was very good indeed, typically  $\pm 0.5$ dB all the way to 10kHz, beyond which a minor divergence was visible: one of the pair fell off a little earlier (above 11kHz), averaging -2dB across the final octave, though it did then continue out to 30kHz, and this minor imbalance was not considered very significant.

The graphical analysis of the waterfall display for energy decay provided some indication of colorations and clarity, and here the *Sabrina* was very good. The prime response is close to a desirably linear phase trend, while the rapid early decay telegraphed the quick, clear music transients heard on test.

The grilles were considered quite satisfactory, but do change the sound somewhat. When measured, some minor reflections are introduced, increasing the response dips at 2.7kHz and 4.5kHz by 2.5dB. These effects are due to grille frame, and remain just a little audible under critical A/B comparisons. Fortunately the cloth itself has very modest attenuation (about 0.65dB), which is hardly noticeable. The waterfall decay graph is only very slightly affected by the presence of the grille, perhaps because of the absorptive felt facing on the face of the loudspeaker baffle, and I suspect many owners will choose to leave the grilles *in situ*.

When averaged over the central region for a 2.83V input, the sensitivity is 87.5dB, which is about average, and a fraction louder than that claimed. A power level of 200W/ch program per loudspeaker will generate a decent 110dB/m maximum on-axis and result in a very healthy 105dB sound level in-room for a stereo pair. While it can certainly punch beyond its weight, one should note that the matching amplifier should ideally be capable of doubling an 8ohms rated output power into 4ohms.

Reflecting its up to date pedigree, distortion was low, particularly in respect to the potentially more intrusive levels of third harmonic. At moderate domestic levels (84dB), second harmonic averaged a very good 0.06% through the midrange from 300Hz - 2kHz, while the more aurally critical third harmonic was held to 0.09%. The treble range was equally impressive: 0.2% of benign second harmonic, and third harmonic at 0.04%; really fine results here. The powerful bass driver would take a massive 50W sine wave with good grace at a low 30Hz, while it really come on song at 40Hz where it could sustain a whopping short term 100W. At more normal low frequency powers, distortions were well balanced; for example, second harmonic was just 0.23% at 87dB spl 40Hz, with third at 0.3%, and a notable absence of higher harmonics.

### The Review System

Constellation *Inspiration 1.0*, Townshend *Allegri* control units; Constellation *Centaur* monoblocks and *Inspiration Stereo*, Naim *NAP300DR* power amplifiers; Naim *SuperLine*, Linn *LP12/Keell Radikal* with Naim *Aro* arm, Lyra *Delos* Cartridge; Naim *UnitiServe* network server and S/PDIF, Naim *NDS Streamer-DAC-555 PS(DR)* sources; Wilson Audio *Sabrina*, Magico *S-5*, Focal *Sopra No2*, Quad *ESL63*, BBC *LS3/5a* speakers; Naim *FRAIM* racks; Transparent *MM2* and Naim *NAC A5* speaker cables, Naim *Super Lumina*, Transparent *MM2* and Van Den Hul *Carbon TPU* interconnect cables



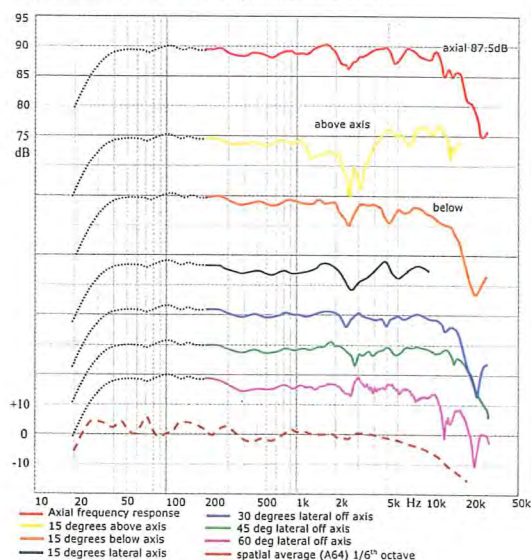
The port tuning from the nearfield graph might suggest a peak at 43 Hz, but more accurate information available from the impedance trace reveals that it's actually placed at a low 33Hz. A fairly energetic self-resonant port mode at 240Hz registers as a 2dB aberration for the LF driver in the nearfield, but this could only be found when working in a large test area and will likely have only a subtle influence.

On axis the frequency response was commendably uniform, averaging 38Hz - 18kHz  $\pm 2.5$ dB, albeit with a characteristic dip of 2.5dB at 2.5kHz, deepening to 7.5dB when measured above axis. This is actually an unlikely listening axis; the more likely axis is below the tweeter, where it measures really well, as it should – well tolerated at  $\pm 2.5$ dB right out to a high 13kHz. The off-axis responses were fine too: 30 degrees lateral is an almost perfectly balanced

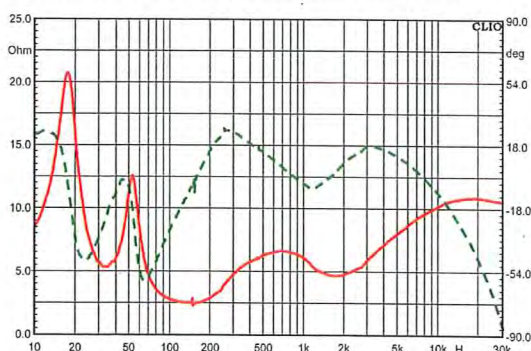
$\pm 1.5$ dB tolerance, while the 60 degree lateral result is also first rate, still holding to  $\pm 2$ dB out to 12kHz.

This fine behaviour, describing a well tailored integration of the driver outputs, is also seen on the room-averaged response, which attains an impressive 25Hz - 8kHz  $\pm 2.5$ dB, confirming the very neutral sounding acoustic drive to the room. (The falloff above 10kHz is quite usual for a 25mm tweeter in this RAR measurement.) The waterfall display for energy decay with frequency is impressive for two reasons. The linear phase early decay is maintained, and is both coherent and stable over frequency, confirming the crisp step-off quality heard on music transients. The later decay output is also nicely controlled (noting that the extended decay ridge in the last octave is characteristic of this tweeter, and does not present a significant subjective difficulty).

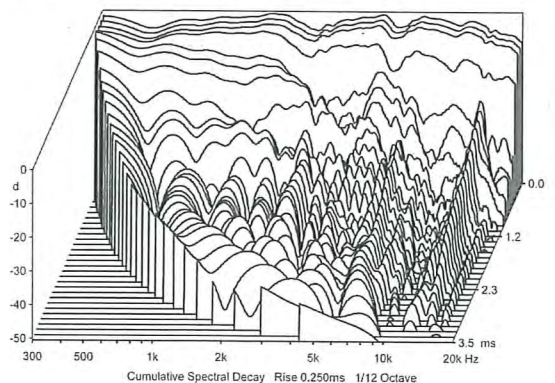
Wilson Audio Sabrina Frequency Responses



Wilson Audio Sabrina Impedance and Phase dashed



Wilson Audio Sabrina Waterfall Display of Energy Decay with Time and Frequency



Test Results

HIFICRITIC Loudspeaker laboratory measured test results

Make	Wilson Audio
Country	made in the USA
Model	Sabrina
Type	moving-coil, floorstanding, bass reflex
Finishes	WilsonGloss, various colours
Size (WxDxH) cm	23.2 x 38.5 x 98.4
Weight	43kg (94lb)
Type	3 way; 203mm frame pulp cone bass; 146mm pulp cone midrange; 25mm soft dome tweeter
Sensitivity	87.5dB @1m (2.83V)
Amplifier loading	Impedance: 2.5ohm minimum (4ohm rated), average loading
Frequency response, axial	38Hz to 18kHz $\pm 2.5$ dB (listener axis), (very good tolerance)
Frequency response off-axis	Excellent: see graphs and in-room response
Bass extension	34Hz -6dB (28Hz -6dB in-room)
Max loudness, in-room	110dBA for a stereo pair
Power rating (max, min)	200W, 50W
Placement (recommended)	In free space, on floor-coupled spikes
Price (UK)	£16,000

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